

### FACT SHEET

as required by LAC 33:IX.3111 for major LPDES facilities, for draft Louisiana Pollutant Discharge Elimination System Permit No. LA0038288; AI 19420; PER20080001 to discharge to waters of the State of Louisiana as per LAC 33:IX.2311.

The permitting authority for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality  
Office of Environmental Services  
P. O. Box 4313  
Baton Rouge, Louisiana 70821-4313

**I. THE APPLICANT IS:** City of Mandeville  
Chinchuba Swamp and East Tchefuncte Marsh Wetland Assimilation Project  
3101 East Causeway Approach  
Mandeville, Louisiana 70448

**II. PREPARED BY:** Todd Franklin

**DATE PREPARED:** May 14, 2009

**III. PERMIT ACTION:** reissue LPDES permit LA0038288, AI 19420; PER20080001

LPDES application received: October 10, 2008

EPA has retained enforcement authority.

Previous LPDES permit effective: January 1, 2004

Minor Modification effective: March 1, 2004

- The permit modification regarded a change in the construction schedule for completing construction of the new outfalls into the wetland.

Previous LPDES permit expired: December 31, 2008

**IV. FACILITY INFORMATION:**

- A. The application is for the discharge of treated sanitary wastewater from a publicly owned treatment works serving the City of Mandeville.
- B. The permit application does not indicate the receipt of industrial wastewater.
- C. The facility is located at 1100 Mandeville High Boulevard in Mandeville, St. Tammany Parish.
- D. The treatment facility consists of a three (3) aerated lagoon cells and three (3) celled rock reed filters. Disinfection is by ultraviolet light.

The discharge from the facility currently flows into Bayou Chinchuba. However, construction is ongoing to distribute the effluent through 27 discharge points. Three (3) discharge points flow into the Chinchuba Swamp, which constitutes approximately 30% of

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the total effluent. Twenty-four (24) discharge points flow into the East Tchefuncte Marsh, which constitutes approximately 70% of the total effluent.

E. **Outfall 001** – Interim Discharge directly into Bayou Chinchuba

Discharge Location: Latitude 30° 22' 27" North  
Longitude 90° 6' 10" West

Description: treated sanitary wastewater

Design Capacity: 4 MGD

Type of Flow Measurement which the facility is currently using:  
Combination Totalizing/Continuous Recorder

Upon completion of the construction of the distribution system, the effluent will be discharged through the following outfalls:

**Outfall 002**

Discharge Location: Latitude 30° 22' 26" North  
Longitude 90° 6' 10" West

Outfall 002 is defined as the sample point discharging into Chinchuba Swamp. This outfall comprises approximately 30% of the total effluent from the sewage treatment facility and is dispersed in three locations.

Description: treated sanitary wastewater

Design Capacity: 4 MGD (expected flow through Outfall 002 is 1.2 MGD)

Type of Flow Measurement which the facility is currently using:  
Combination Totalizing/Continuous Recorder

**Outfall 003**

Discharge Location: Latitude 30° 23' 44" North  
Longitude 90° 7' 32" West

Outfall 003 is defined as the sample point discharging into the East Tchefuncte Marsh. This outfall comprises approximately 70% of the total effluent from the sewage treatment facility and is dispersed in 24 locations.

Description: treated sanitary wastewater

Design Capacity: 4 MGD (expected flow through Outfall 003 is 2.8 MGD)

Type of Flow Measurement which the facility is currently using:  
Combination Totalizing/Continuous Recorder

V.

**RECEIVING WATERS:**

Currently, the discharge is into Bayou Chinchuba; thence into Lake Pontchartrain in Subsegment 040904 of the Lake Pontchartrain Basin. Subsegment 040904 is defined at LAC 33:IX.1123.Table 3

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as *Bayou Cane* – from US-190 to Lake Pontchartrain. This Subsegment is listed on the 303(d) list of impaired waterbodies.

The **critical low flow** (7Q10) used for permit limit calculations is 0.1 cfs.

The **hardness value** is 25 mg/l and the **fifteenth percentile TSS** is 7.8 mg/l.

The designated uses and degree of support for Subsegment 040904 of the Lake Pontchartrain Basin are as indicated in the table below<sup>1/</sup>:

Degree of Support of Each Use (Subsegment 040904)						
Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
Not Supported	Not Supported	Not Supported	Not Supported	N/A	N/A	N/A

The designated uses and degree of support for Subsegment 040904 of the Lake Pontchartrain Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the 2006 Water Quality Management Plan, Water Quality Inventory Integrated Report, Appendix A, respectively.

The **planned discharge** is into Chinchuba Swamp and the East Tchefuncte Marsh in Subsegments 040805 and 040806, respectively, of the Lake Pontchartrain Basin. Subsegment 040805 is defined at LAC 33:IX.1123.Table 3 as *Chinchuba Swamp Wetland-forested wetland located 0.87 miles southwest of Mandeville, southeast of Sanctuary Ridge, and north of Lake Pontchartrain*. Subsegment 040806 is defined as *East Tchefuncte Marsh Wetland-freshwater and brackish marsh located just west of Mandeville, bounded on the south by Lake Pontchartrain, the west by Tchefuncte River, the north by LA-22, and the east by Sanctuary Ridge*. Neither of these Subsegments are listed on the 303(d) list of impaired waterbodies.

The **critical low flow** (7Q10) used for permit limit calculations is 0.1 cfs.

The **hardness value** is 25 mg/l and the **fifteenth percentile TSS** is 7.8 mg/l.

The designated uses and degree of support for Subsegments 040805 and 040806 of the Lake Pontchartrain Basin are as indicated in the tables below<sup>1/</sup>:

Degree of Support of Each Use (Subsegment 040805)						
Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
N/A	Full	Full	N/A	N/A	N/A	N/A

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Degree of Support of Each Use (Subsegment 040806)						
Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
N/A	Full	Full	N/A	N/A	N/A	N/A

The designated uses and degree of support for Subsegments 040805 and 040806 of the Lake Pontchartrain Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the previous fact sheet for the City of Mandeville, dated September 29, 2003, respectively.

#### VI. ENDANGERED SPECIES:

The receiving waterbody, Subsegment 040904 of the Lake Pontchartrain Basin, has been identified by the U.S. Fish and Wildlife Service (FWLS) as habitat for the Gulf sturgeon and the Louisiana quillwort, which is listed federally as an endangered or threatened species. Since effluent limitations are established in the permit to ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat, LDEQ has determined that the issuance of this LPDES permit is not likely to adversely affect the Gulf sturgeon or the Louisiana quillwort or their aquatic habitats. As instructed by the FWS in a letter dated November 17, 2008, from Rieck (FWS) to Nolan (LDEQ), this fact sheet has been sent to the FWS for review and consultation.

The planned receiving waterbodies, Subsegments 040805 and 040806 of the Lake Pontchartrain Basin, are not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U. S. Fish and Wildlife Service (FWS). The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat.

#### VII. HISTORIC SITES:

The discharge is from an existing facility location, which does not include an expansion beyond the existing perimeter. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the 'Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits' no consultation with the Louisiana State Historic Preservation Officer is required.

#### VIII. PUBLIC NOTICE:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit modification and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

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Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

For additional information, contact:

Mr. Todd Franklin  
Permits Division  
Department of Environmental Quality  
Office of Environmental Services  
P. O. Box 4313  
Baton Rouge, Louisiana 70821-4313

IX.

**PROPOSED PERMIT LIMITS:**

**Louisiana Water Quality Integrated Report**

Subsegment 040904 is listed on LDEQ's Final 2006 303(d) List as impaired for fecal coliform, dissolved oxygen, turbidity, and copper. To date no TMDLs have been completed for this waterbody.

A reopener clause will be established in the permit to allow for the requirement of more stringent effluent limitations and requirements as imposed by a TMDL. Until completion of TMDLs for the Lake Pontchartrain Basin, those suspected causes for impairment which are not directly attributed to the sanitary wastewater point source category have been eliminated in the formulation of effluent limitations and other requirements of this permit. Additionally, suspected causes of impairment which could be attributed to pollutants which were not determined to be discharged at a level which would cause, have the reasonable potential to cause or contribute to an excursion above any present state water quality standard were also eliminated.

**Fecal Coliform**

To protect against the development of pathogenic organisms in the receiving waterbodies, fecal coliform limits have been established in this permit.

**Dissolved Oxygen**

To protect against the potential for discharges of DO at levels below that of the ambient waterbody and for discharges of organic material at levels exceeding state water quality standards, BOD<sub>5</sub> limits have been placed in the permit.

**Turbidity**

To protect against the potential for the introduction of turbidity into the receiving waters, TSS limits have been placed in the permit.

**Copper**

To assess the potential discharge of Copper into the receiving waterbody, effluent analysis submitted with the application was reviewed. No levels of copper were reported in the effluent at a detection level of 0.01 mg/l. Based on this evaluation, we believe the potential for the discharge of Copper from the facility at levels which will cause or contribute to Copper loadings in Lake Pontchartrain is unlikely.

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**Interim Effluent Limitations for Outfall 001**

The effluent limitations for Outfall 001 shall become effective on the effective date of the permit and shall expire upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh, but no later than two (2) years from the effective date of the permit.

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
CBOD <sub>5</sub>	334	10 mg/l	15 mg/l	Limits are set in accordance with the Areawide Policy for St. Tammany Parish
TSS	500	15 mg/l	23 mg/l	Since there is no numeric water quality criterion for TSS, and in accordance with the current Water Quality Management Plan, the TSS effluent limitations shall be based on a case-by-case evaluation of the treatment technology being utilized at a facility. Therefore, a Technology Based Limit has been established through Best Professional Judgement for the type of treatment technology utilized at this facility.
Ammonia-Nitrogen	133	4 mg/l	8 mg/l	Limits are set in accordance with the Areawide Policy for St. Tammany Parish

**Priority Pollutants**

Effluent Characteristic	Monthly Avg. (lbs./day)	Daily Maximum (lbs./day)	Basis
Zinc, Total	1.64	3.90	Water Quality Based Limit. See Appendix I and B-1 for further details.
Phenols, Total	Report	Report	A priority pollutant scan indicated a need for a Water Quality Based Limit. Therefore, for monitoring and data information gathering purposes, "report" is proposed during this interim period.
Lead, Total	Report	Report	

According to an electronic mail, from David DeGeneres to Todd Franklin dated February 17, 2009, the City of Mandeville currently discharges 100% of the effluent into Bayou Chinchuba. However, the distribution system is currently under construction and will be completed in approximately 6 months. Reporting requirements for phenols and lead, as opposed to limitations, are being placed into the permit, under the assumption that the distribution system will be completed within at least three years from the

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effective date of the permit. If the distribution system is not completed within three years from the effective date of the permit, the permit must be reopened to include limitations for phenols and lead in Outfall 001.

### Louisiana Water Quality Integrated Report

Subsegments 040805 and 040806 are not listed on LDEQ's Final 2006 Louisiana Water Quality Integrated Report as impaired, and to date no TMDL's have been established. A reopener clause will be established in the permit to allow for the requirement of more stringent effluent limitations and requirements as imposed by any future TMDLs.

### Interim Effluent Limitations for Outfall 002

In accordance with LAC 33:IX.1109.J.6 and the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standard, Water Quality Management Plan, Volume 3, the Department may allow the discharge of the equivalent of secondarily treated effluent into wetlands for the purposes of nourishing and enhancing those wetlands. According to LAC 33:IX.5911.A & B, the effluent quality attainable by facilities eligible for treatment equivalent to secondary treatment are 45 mg/l BOD<sub>5</sub> monthly average / 65 mg/l BOD<sub>5</sub> weekly average and 45 mg/l TSS monthly average / 65 mg/l TSS weekly average. However, Alternative State Requirement (ASR) provisions are contained in 40 CFR §133.105(d). The ASR provision allows States the flexibility to set permit limits above the maximum levels of 45 mg/l monthly average and 65 mg/l weekly average for BOD<sub>5</sub> and TSS from lagoons meeting certain requirements. EPA published the approved ASRs in 49 FR 37005 on September 20, 1984. An alternate TSS Limit of 90 mg/l monthly average was approved for the State of Louisiana. According to LAC 33:IX.711.D, with respect to BOD<sub>5</sub>, treatment equivalent to secondary treatment for oxidation ponds is defined as 30 mg/l monthly average / 45 mg/l weekly average. Therefore, these limitations will be included in the permit.

Interim limits shall become effective upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh, but no later than two (2) years from the effective date of the permit and expire three (3) years from the effective date of the permit.

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
BOD <sub>5</sub>	300	30 mg/l	45 mg/l	Limits are based on approved Treatment Equivalent to Secondary Treatment as allowed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan, Volume 3 for discharges of sanitary wastewater into an approved wetland.
TSS	901	90 mg/l	135 mg/l	

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Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
Magnesium, Total	Report	Report (mg/l)	Report (mg/l)	In conjunction with the Wetland System Monitoring Requirements of the permit, "Report" for the listed metals has been proposed for this permit based on Best Professional Judgement (BPJ).
Lead, Total	Report	Report (mg/l)	Report (mg/l)	
Cadmium, Total	Report	Report (mg/l)	Report (mg/l)	
Chromium, Total	Report	Report (mg/l)	Report (mg/l)	
Copper, Total	Report	Report (mg/l)	Report (mg/l)	
Zinc, Total	Report	Report (mg/l)	Report (mg/l)	
Iron, Total	Report	Report (mg/l)	Report (mg/l)	
Nickel, Total	Report	Report (mg/l)	Report (mg/l)	
Silver, Total	Report	Report (mg/l)	Report (mg/l)	
Selenium, Total	Report	Report (mg/l)	Report (mg/l)	
Total Nitrogen	Report	Report (mg/l)	Report (mg/l)	Values obtained will be used to calculate long term wetland loading rates.
Total Phosphorus	Report	Report (mg/l)	Report (mg/l)	

Priority Pollutants

Effluent Characteristic	Monthly Avg. (lbs./day)	Daily Maximum (lbs/day)	Basis
Phenols, Total	Report	Report	A priority pollutant scan indicated a need for a Water Quality Based Limit. Therefore, for monitoring and data information gathering purposes, "report" is proposed during this interim period.
Lead, Total	Report	Report	
Zinc, Total	0.49	1.17	Water Quality Based Limit. See Appendix I and B-1 for further details.

Interim Effluent Limitations for Outfall 003

Interim limits shall become effective upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh, but no later than two (2) years from the effective date of the permit and expire three (3) years from the effective date of the permit.

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
BOD <sub>5</sub>	701	30 mg/l	45 mg/l	Limits are based on approved Treatment Equivalent to Secondary Treatment as allowed in the Permitting Guidance



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Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
TSS	2,102	90 mg/l	135 mg/l	Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan, Volume 3 for discharges of sanitary wastewater into an approved wetland.
Magnesium, Total	Report	Report (mg/l)	Report (mg/l)	In conjunction with the Wetland System Monitoring Requirements of the permit, "Report" for the listed metals has been proposed for this permit based on Best Professional Judgement (BPJ).
Lead, Total	Report	Report (mg/l)	Report (mg/l)	
Cadmium, Total	Report	Report (mg/l)	Report (mg/l)	
Chromium, Total	Report	Report (mg/l)	Report (mg/l)	
Copper, Total	Report	Report (mg/l)	Report (mg/l)	
Zinc, Total	Report	Report (mg/l)	Report (mg/l)	
Iron, Total	Report	Report (mg/l)	Report (mg/l)	
Nickel, Total	Report	Report (mg/l)	Report (mg/l)	
Silver, Total	Report	Report (mg/l)	Report (mg/l)	
Selenium, Total	Report	Report (mg/l)	Report (mg/l)	
Total Nitrogen	Report	Report (mg/l)	Report (mg/l)	Values obtained will be used to calculate long term wetland loading rates.
Total Phosphorus	Report	Report (mg/l)	Report (mg/l)	

Effluent Characteristic	Monthly Avg. (lbs./day)	Daily Maximum (lbs./day)	Basis
Phenols, Total	Report	Report	A priority pollutant scan indicated a need for a Water Quality Based Limit. Therefore, for monitoring and data information gathering purposes, "report" is proposed during this interim period.
Lead, Total	Report	Report	
Zinc, Total	1.15	2.73	Water Quality Based Limit. See Appendix I and B-1 for further details.

## Final Effluent Limits:

## Outfall 002

Final limits shall become effective three (3) years from the effective date of the permit and expire on the expiration date of the permit.

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Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
BOD <sub>5</sub>	300	30 mg/l	45 mg/l	Limits are based on approved Treatment Equivalent to Secondary Treatment as allowed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan, Volume 3 for discharges of sanitary wastewater into an approved wetland.
TSS	901	90 mg/l	135 mg/l	
Magnesium, Total	Report	Report (mg/l)	Report (mg/l)	In conjunction with the Wetland System Monitoring Requirements of the permit, "Report" for the listed metals has been proposed for this permit based on Best Professional Judgement (BPJ).
Lead, Total	Report	Report (mg/l)	Report (mg/l)	
Cadmium, Total	Report	Report (mg/l)	Report (mg/l)	
Chromium, Total	Report	Report (mg/l)	Report (mg/l)	
Copper, Total	Report	Report (mg/l)	Report (mg/l)	
Zinc, Total	Report	Report (mg/l)	Report (mg/l)	
Iron, Total	Report	Report (mg/l)	Report (mg/l)	
Nickel, Total	Report	Report (mg/l)	Report (mg/l)	
Silver, Total	Report	Report (mg/l)	Report (mg/l)	
Selenium, Total	Report	Report (mg/l)	Report (mg/l)	
Total Nitrogen	Report	Report (mg/l)	Report (mg/l)	Values obtained will be used to calculate long term wetland loading rates.
Total Phosphorus	Report	Report (mg/l)	Report (mg/l)	

## Priority Pollutants

Effluent Characteristic	Monthly Avg. (lbs./day)	Daily Maximum (lbs./day)	Basis
Phenols, Total	0.53	1.26	Water Quality Based Limit. See Appendix I and B-1 for further details.
Lead, Total	0.021	0.049	
Zinc, Total	0.49	1.17	

The above draft priority pollutant limits for Total Phenols and Total Lead are based upon the evaluation of one effluent analysis. **The permittee may conduct and submit the results of three (3) or more additional effluent analyses to either refute or substantiate the presence of the above toxic pollutants.** The additional analyses will be evaluated by this Office to determine if the pollutant is potentially in the effluent and if it potentially exceeds the State's water quality standards.

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## Outfall 003

Final limits shall become effective three (3) years from the effective date of the permit and expire on the expiration date of the permit.

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
BOD <sub>5</sub>	701	30 mg/l	45 mg/l	Limits are based on approved Treatment Equivalent to Secondary Treatment as allowed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan, Volume 3 for discharges of sanitary wastewater into an approved wetland.
TSS	2,102	90 mg/l	135 mg/l	
Magnesium, Total	Report	Report (mg/l)	Report (mg/l)	In conjunction with the Wetland System Monitoring Requirements of the permit, "Report" for the listed metals has been proposed for this permit based on Best Professional Judgement (BPJ).
Lead, Total	Report	Report (mg/l)	Report (mg/l)	
Cadmium, Total	Report	Report (mg/l)	Report (mg/l)	
Chromium, Total	Report	Report (mg/l)	Report (mg/l)	
Copper, Total	Report	Report (mg/l)	Report (mg/l)	
Zinc, Total	Report	Report (mg/l)	Report (mg/l)	
Iron, Total	Report	Report (mg/l)	Report (mg/l)	
Nickel, Total	Report	Report (mg/l)	Report (mg/l)	
Silver, Total	Report	Report (mg/l)	Report (mg/l)	
Selenium, Total	Report	Report (mg/l)	Report (mg/l)	
Total Nitrogen	Report	Report (mg/l)	Report (mg/l)	Values obtained will be used to calculate long term wetland loading rates.
Total Phosphorus	Report	Report (mg/l)	Report (mg/l)	

## Priority Pollutants

Effluent Characteristic	Monthly Avg. (lbs./day)	Daily Maximum (lbs./day)	Basis
Phenols, Total	1.19	2.84	Water Quality Based Limit. See Appendix I and B-1 for further details.
Lead, Total	0.047	0.11	
Zinc, Total	1.15	2.73	

The above draft priority pollutant limits for Total Phenols and Total Lead are based upon the evaluation of one effluent analysis. The permittee may conduct and submit the results of three (3)

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or more additional effluent analyses to either refute or substantiate the presence of the above toxic pollutants. The additional analyses will be evaluated by this Office to determine if the pollutant is potentially in the effluent and if it potentially exceeds the State's water quality standards.

**Other Effluent Limitations:**

**Outfall 001:** effective on the effective date of the permit and shall expire upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh, but no later than two (2) years from the effective date of the permit

**Outfall 002 and 003:** effective upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh, but no later than two (2) years from the effective date of the permit and expire on the expiration date of the permit

**1) Fecal Coliform**

**Outfall 001:** The discharge from this facility is into a water body which has a designated use of Primary Contact Recreation. According to LAC 33:IX.1113.C.5.a, the fecal coliform standards for this water body are 200/100 ml and 400/100 ml. Therefore, the limits of 200/100 ml (Monthly Average) and 400/100 ml (Daily Maximum) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through Best Professional Judgement in order to ensure that the water body standards are not exceeded, and due to the fact that existing facilities have demonstrated an ability to comply with these limitations using present available technology.

**Outfalls 002 & 003:** The discharge from this facility is into a water body (wetland), which has a designated use of Secondary Contact Recreation. However, Primary Contact Recreation limits of 200/100 ml (Monthly Average) and 400/100 ml (Weekly Average) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through Best Professional Judgment as an added measure for public safety, and due to the fact that existing facilities have demonstrated an ability to comply with these limitations using present available technology.

**2) pH**

According to LAC 33:IX.3705.A.1., POTW's must treat to at least secondary levels. Therefore, in accordance with LAC 33:IX.5905.C, the pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time.

**3) Solids and Foam**

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

**Toxicity Characteristics**

In accordance with EPA's Region 6 Post-Third Round Toxics Strategy, permits issued to treatment works treating domestic wastewater with a flow (design or expected) greater than or equal to 1 MGD shall require biomonitoring at some frequency for the life of the permit or where available data show reasonable potential to cause lethality, the permit shall require a whole effluent toxicity (WET) limit (*Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards*, September 27, 2001 VERSION 4).

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Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of the effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. LAC 33:IX.1121.B.3. provides for the use of biomonitoring to monitor the effluent for protection of State waters. The biomonitoring procedures stipulated as a condition of this permit are as follows:

The permittee shall submit the results of any biomonitoring testings performed in accordance with the LPDES Permit No. LA0038288, Biomonitoring Section for the organisms indicated below.

**Outfall 001**

Effective on the effective date of the permit and shall expire upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh, but no later than two (2) years from the effective date of the permit.

**TOXICITY TESTS****FREQUENCY**

Chronic static renewal 7-day survival & reproduction test  
using Ceriodaphnia dubia (Method 1002.0)

once/quarter

Chronic static renewal 7-day survival & growth test  
using fathead minnow (Pimephales promelas) (Method 1000.0)

once/quarter

**Dilution Series** - The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional concentrations shall be 31%, 42%, 55%, 74%, and 98%. The low-flow effluent concentration (critical low-flow dilution) is defined as 98% effluent. The critical dilution is calculated in Appendix B-1 of this fact sheet. Results of all dilutions shall be documented in a full report according to the test method publication mentioned in the **Biomonitoring Section** under Whole Effluent Toxicity. This full report shall be submitted to the Office of Environmental Compliance as contained in the Reporting Paragraph located in the **Biomonitoring Section** of the permit.

**Outfall 002 & 003**

Effective upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh, but no later than two (2) years from the effective date of the permit and expire on the expiration date of the permit.

**TOXICITY TESTS****FREQUENCY**

48 Hour Definitive Toxicity Test  
using Daphnia pulex

1/year<sup>1</sup>

48 Hour Definitive Toxicity Test  
using fathead minnow (Pimephales promelas)

1/year<sup>1</sup>

<sup>1</sup> In accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan Volume 3, Version 6 (April 16, 2008), discharge to a wetland will require annual acute biomonitoring

**Dilution Series** - The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow

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effluent concentration (critical low-flow dilution) is defined as 100% effluent. The effluent should consist of waters from Outfall 002 and 003 combined. Results of all dilutions shall be documented in a full report according to the test method publication mentioned in the **Biomonitoring Section** under Whole Effluent Toxicity. This full report shall be submitted to the Office of Environmental Compliance as contained in the Reporting Paragraph located in the **Biomonitoring Section** of the permit.

The permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.2383. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

See attached **BIOMONITORING REQUIREMENTS** for more information.

### Wetland System Monitoring

The following Wetland System Monitoring will be required upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh and continue through the expiration date of the permit.

The five (5) year LPDES permit contains technology-based effluent limitations for BODs, TSS, and pH reflecting the best controls available. Additional water quality-based effluent limitations and/or conditions are included in the LPDES permit. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

The state has established a narrative water quality criterion, which states that:

"No substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant, or animal life or significantly increase health risks due to exposure to the substances or consumption of contaminated fish or other aquatic life." (*Louisiana Surface Water Quality Standards*, LAC Title 33, Part IX, Chapter 11, Section 1113.B.5.)

However, the State of Louisiana has set the following specific criteria (LAC 33:IX.1113.B.12) for protection of the receiving Natural Wetlands (Chinchuba Swamp and East Tchefuncte Marsh):

- **Wetland biological integrity will be guided by above-ground wetland vegetative productivity with consideration given to floral diversity. Due to effluent addition, the discharge area of a wetland shall have no more than a 20 percent reduction in the rate of total above-ground wetland productivity over a five-year period as compared to a reference area.**

EPA document *Biological Criteria: National Program Guidance for Surface Waters*, discusses the Clean Water Act and states that "the general authority for biological criteria comes from Section 101(a) of the Act which establishes as the objective of the Act, the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters, including natural wetlands. To meet this objective, water quality criteria must include criteria to protect biological integrity. Section 101(a)(2) includes the interim water quality goal for the protection and propagation of fish, shellfish, and wildlife." Biological integrity is functionally defined in this EPA manual as "the condition of the aquatic community inhabiting the unimpaired waterbodies of a specified habitat as measured by community structure and function." The importance and function of wetlands include,

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but are not limited to the following: erosion and flood control, saltwater intrusion control, water quality enhancement, habitat for threatened and endangered species, wildlife habitat, nutrient material cycling, recreation and aesthetics.

Natural wetland loss is a problem in Louisiana. This problem is caused, in part, by insufficient sedimentation, relative sea level rise, and land subsidence. The introduction of nutrient rich wastewater to natural wetlands is beneficial in that it stimulates productivity in the wetland. This productivity promotes vertical accretion through increased organic matter deposition and the formation of soil through increased root growth. This vertical accretion helps maintain the wetlands. Additionally, the total suspended solids, provided by the wastewater, also increase the sediment level in the wetland.

Although the introduction of wastewater into natural wetlands renders benefits to the wetland system, changes to the system will occur. Therefore, it is important to address issues, which will indicate the extent of these changes and to determine if the changes are acceptable.

In addition to the standard biomonitoring which is proposed in this permit, the biological monitoring schedule proposed below is broader in scope, and more specific to the wetland ecosystem, than standard biomonitoring. It will provide a more direct indication of change in functions of the wetland system as a whole. The proposed biological monitoring schedule for the City of Mandeville / Chinchuba Swamp and East Tchefuncte Marsh Wetland Assimilation Project is based on Best Professional Judgement (BPJ), taking into account the size and characteristics of the wetland system.

The following parameters are proposed to be sampled and monitored for the specified wetland component at three (3) monitoring sites within the Discharge Area of each wetland area (Chinchuba Swamp and the East Tchefuncte Marsh) and two (2) monitoring sites within the Reference Area. The Discharge Area is defined as the area of wetlands directly affected by effluent addition, and is inclusive of the delineated assimilation area. The Reference Area is defined as wetland area that is nearby and similar to the discharge area, but that is not affected by effluent addition. Listed below are the coordinates of each of the sites listed above:

**Discharge Area of Chinchuba Swamp:**

Near Site: Latitude 30° 22' 27.51" North  
Longitude 90° 6' 7.2" West

Mid Site: Latitude 30° 22' 13.59" North  
Longitude 90° 6' 41.24" West

Out Site: Latitude 30° 22' 5.11" North  
Longitude 90° 7' 2.85" West

**Discharge Area of the East Tchefuncte Marsh:**

Near Site: Latitude 30° 23' 26.47" North  
Longitude 90° 7' 16.7" West

Mid Site: Latitude 30° 23' 0.2" North  
Longitude 90° 7' 45.12" West

Out Site: Latitude 30° 22' 44.45" North  
Longitude 90° 8' 8.09" West

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**Reference Area #1:** Mandeville Tchefuncte Marsh Control Site (Reference area for the East Tchefuncte Marsh)

Coordinates:      Latitude 30° 23' 2.72" North  
                          Longitude 90° 9' 46.25" West

**Reference Area #2:** Mandeville Bayou Castine Control Site (Reference area for Chinchuba Swamp)

Coordinates:      Latitude 30° 21' 6.03" North  
                          Longitude 90° 2' 11.45" West

### **SPECIES CLASSIFICATION**

Within the three Discharge Area sites of each wetland and within the two (2) Reference Area sites, three or more 10 x 100 m quadrates should be established. These plots must be oriented perpendicular to the hydrological gradient. All trees within these subplots with a diameter at breast height (dbh) greater than 3.2 cm should be tagged with an identification number.

The relative importance of each major tree species in both the Discharge and Reference Areas will be based on the density (total number), dominance (basal area), and frequency of occurrence in each of the plots using equations 1-4 (Barbour et al. 1987).

Relative density = (individuals of a species)/(total individuals of all species)      (1)

Relative dominance = (total basal area of a species)/(total basal area of all species)      (2)

Relative frequency = (frequency of species)/(total frequency of all species in area)      (3)

Importance Value = Relative density + Relative dominance + Relative Frequency      (4)

### **PERCENTAGE OF WHOLE COVER and GROWTH STUDIES**

#### **Forested Wetland Production**

Productivity of a forested wetland is defined as the sum of stem growth (perennial productivity) and leaf and fruit fall (ephemeral productivity). Above-ground net primary productivity (NPP) should be calculated as the sum of ephemeral and perennial productivity, and presented as live dry weight per square meter per year basis ( $\text{g/m}^2/\text{yr}$ ).

**Perennial productivity** should be calculated using diameter at breast height (dbh) measurements of all trees with dbh greater than 3.2 cm within the subplots defined above. Measurements of dbh should be taken during two consecutive winters when trees are dormant, and biomass calculated using allometric equations (Magonigal et al. 1997; Scott et al. 1985). The following steps should be used to calculate perennial productivity:

- Estimate biomass (in kg) from dbh using allometric equations (see Table 1 below).
- Sum biomass per study site and divide by area (in  $\text{kg/m}^2$ ) of the study site. This calculates the biomass per unit area ( $\text{kg/m}^2$ ) for each year and study site.
- Subtract Year 1 biomass ( $\text{kg/m}^2$ ) from Year 2 biomass, and multiply by 1000. This calculates the perennial productivity as  $\text{g/m}^2/\text{yr}$ .



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**Table 1.** Regression equations used to convert diameter at breast height (DBH) measurements to overall perennial biomass. All equations are in the form: Biomass = f (DBH), where biomass is in kg, DBH is in cm and f is the parameterized function.

Species	Biomass f(D)	DBH Range	Reference
<i>Fraxinus spp.</i>	Biomass (kg) = $((2.669 * ((DBH_{cm} * 0.394)^{1.16332})) * 0.454$	>10 cm	Megonigal et al. '97
<i>Taxodium distichum</i>	Biomass (kg) = $10^{(-.97 + 2.34 * \text{LOG}_{10}(DBH_{cm}))}$	>10 cm	Megonigal et al. '97
<i>Nyssa aquatica</i>	Biomass (kg) = $10^{(-9.19 + 2.291 * \text{LOG}_{10}(DBH_{cm}))}$	>10 cm	Megonigal et al. '97
<i>Acer rubrum</i>	Biomass (kg) = $((2.39959 * ((DBH_{cm} * 0.394)^2)^{1.2003})) * 0.454$	10-28 cm	Megonigal et al. '97
<i>Quercus nigra</i>	Biomass (kg) = $((3.15067 * ((DBH_{cm} * 0.394)^2)^{1.21955})) * 0.45$	10-28 cm	Megonigal et al. '97
	Biomass (kg) = $((5.99898 * ((DBH_{cm} * 0.394)^2)^{1.08527})) * 0.45$	>28 cm	Megonigal et al. '97
<i>Salix spp.</i>	Biomass (kg) = $10^{(-1.5 + 2.78 * \text{LOG}_{10}(DBH_{cm}))}$	n.a.	Scott et al. 1985
Other Species	Biomass (kg) = $((2.54671 * ((DBH_{cm} * 0.394)^2)^{1.20138})) * 0.45$	10-28 cm	Megonigal et al. '97
	Biomass (kg) = $((1.80526 * ((DBH_{cm} * 0.394)^2)^{1.27313})) * 0.45$	>28 cm	Megonigal et al. '97

**Ephemeral productivity** should be measured using 0.25 m<sup>2</sup> leaf litter boxes, with screened bottoms and approximately 10 cm wide sides. Six boxes should be placed randomly in each of the 10 x 100 m quadrates within the Discharge Area and Reference Area. Leaves and other materials that collect in the boxes should be gathered bimonthly, separated into leaves and woody material, dried to a constant weight, and weighed. Ephemeral productivity should be calculated by summing the dried weight of leaves from each box over one year and extrapolating to g/m<sup>2</sup>/yr.

**Net Primary Production:** Aboveground net primary production (NPP) will be calculated as the sum of leaf litter and wood protection, and will be given in g/m<sup>2</sup>/yr.

#### Marsh Vegetation Production

Net production in areas dominated by non-woody herbaceous vegetation will be determined by end of season live (EOSL) biomass analysis. Sampling should be conducted during the last week of September or the first week of October. At least five 0.6 m<sup>2</sup> clip plots will be taken at each location using randomly placed quadrants. Vegetation within the quadrant will be cut as close to the surface as possible, stored in labeled paper bags, brought back to the laboratory, and refrigerated until processing. Live material will be separated from dead, and dried at 60° C to a constant weight. All data will be presented on a live dry weight per square meter basis (g dry wt m<sup>-2</sup>).

#### **WATER STAGE**

Water stage is a gauged measurement of the water depth, which will assist in determining stress in the wetlands from hydrologic loadings and will determine the existence of a zone of influence resulting from wastewater applications. The zone around the discharge serves to assimilate the wastewater most effectively. This zone grows larger as wastewater continues to be discharged and the assimilative capacity of the immediate area becomes saturated. The water stage at set points within each of the three (3) Discharge Area sites of each wetland and the two (2) Reference Area sites shall be measured monthly.

#### **METALS, NUTRIENT I, NUTRIENT II, AND OTHER ANALYSIS**

Samples of the flora, sediment, and surface water at each of the three (3) Discharge Area sites of each wetland and the two (2) Reference Area sites shall be collected and analyzed for the following metals and nutrients: Magnesium, Lead, Cadmium, Chromium, Copper, Zinc, Iron, Nickel, Silver, Selenium, Total Kjeldahl Nitrogen, and Total Phosphorus.

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Samples of the sediment and surface water at each of the three (3) Discharge Area sites of each wetland and the two (2) Reference Area sites shall be collected and analyzed for the following nutrients: Ammonia-Nitrogen, Nitrite Nitrogen, Nitrate Nitrogen, and Phosphate.

Samples of the surface water at each of the three (3) Discharge Area sites of each wetland and the two (2) Reference Area sites shall be collected and analyzed for the following parameters: Biochemical Oxygen Demand (BOD<sub>5</sub>), Total Suspended Solids, pH, and Dissolved Oxygen.

- **Metals and nutrient data from plant tissue samples** will identify excesses or deficiencies that could become problematic.
- **Sediment analysis for metals and nutrients** will indicate whether or not metals are bound and buried in the sediments, and nutrients assimilated.
- **Corresponding analysis of surface water** must be made to provide a comparison of water quality in the vicinity of the discharge and at increasing distance from it.

#### **Sampling procedures to be used during the wetland monitoring phase.**

Water quality analyses must be conducted according to test procedures approved under 40 CFR Part 136.

For soils/sediments, sample preservation, handling, and analysis must meet the specifications of the Test Methods for Evaluating Solid Waste Physical/Chemical Methods, third edition (EPA Publication Number SW-846, 1986, or most recent revision) or an equivalent substitute as approved by the administrative authority.

#### **ACCRETION RATES**

Accretion rates will provide an indication of how the effluent is contributing sediment and organic matter into the wetland area. Feldspar markers will be laid on the wetland surface in each of the three (3) Discharge Area sites of each wetland and the two (2) Reference Area sites, with each plot having three 0.25 m<sup>2</sup> subplots where 1 cm thick powdered feldspar clay will be placed (Cahoon and Turner 1989). The subplots will be marked at each corner with PVC poles. Every four years, the thickness of material deposited on top of the feldspar marker at one subplot of each plot will be measured destructively by taking a 20 cm x 20 cm plug using a shovel or trowel, cleanly slicing the core into several sections to reveal the horizon, then measuring the thickness of material above the surface of the horizon at 10 different locations. The rate of vertical accretion will be calculated by dividing the mean thickness of material above the surface of the horizon by the amount of time the horizon had been in place.

#### **NUTRIA CONCERNS**

Evidence has shown that nutria, which can be detrimental to a marsh wetland, may be highly attracted to the high protein levels caused by high levels of nutrients in the water being sprayed onto the wetland assimilation site. Therefore, the permittee shall conduct an assessment of the nutria impact on the assimilation site. An example to consider is to establish anti-nutria enclosures within the wetland assimilation site and compare the vegetation growth within the enclosure versus outside the enclosure.

Based on the results from a number of wetland assimilation sites in Louisiana, we conclude that the benthic and nekton community sampling is not likely to provide relevant data for the monitoring program. Therefore, benthic monitoring will no longer be included as part of wetland assimilation permits.

Compared to data from the Use Attainability Analysis and the Reference Areas, the effects of the discharge on the biological integrity (as defined above) may be accurately assessed.

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The permittee shall submit the results of any wetland monitoring testing performed in accordance with the LPDES Permit Number LA0038288, Part II, Section D, shown in the table below:

PARAMETER	WETLAND COMPONENT		
	FLORA	SEDIMENT	SURFACE WATER
Species Classification	P		
Percentage of Whole Cover (for each species)	P		
Growth Studies	A <sub>1</sub>		
Water Stage			M
Metals Analysis: Mg, Pb, Cd, Cr, Cu, Zn, Fe, Ni, Ag, Se	P <sub>1</sub>	P <sub>1</sub>	P
Nutrient Analysis I: TKN, TP	P <sub>1,2</sub>	P <sub>1,2</sub>	Q
Nutrient Analysis II: NH <sub>3</sub> N, NO <sub>2</sub> N, NO <sub>3</sub> N, PO <sub>4</sub>		P <sub>1</sub>	Q
Others: BOD <sub>5</sub> , TSS, pH, Dissolved Oxygen			P
Accretion Rate		P	

Water quality will be monitored by taking water samples along the path of flow of the effluent in the assimilation site and from one or more control sites.

Sampling in the **DISCHARGE AREA** must be conducted as follows:

For both the Chinchuba Swamp and the East Tchefuncte Marsh, collection of a minimum of three samples per site in each of three sites: 1) Near Site, 2) Mid Site, and 3) Out Site. Locations of these sites were previously identified.

EXCEPTION: Only one sample per site in each of the three sites for those samples collected quarterly.

Sampling for the **REFERENCE AREA** must be conducted as follows:

Collection of a minimum of three samples in each reference area. Locations were previously identified. All three samples will be taken from a site or sites similar to the wastewater management area in the receiving stream.

EXCEPTION: Only one sample per site in the reference area for those samples collected quarterly.

**A:** **ANNUALLY.** Sample once per year at all three (3) DISCHARGE AREA sites of each wetland and the two (2) REFERENCE AREA sites and included in the yearly report.

A<sub>1</sub> – Stem growth and litter fall

**M:** **MONTHLY.** Samples should be taken at all three (3) DISCHARGE AREA sites of each wetland and two (2) REFERENCE AREA sites each month and included in the yearly report.

**P:** **PERIODICALLY.** Sampling must be made once during September through November in the fourth year of the permit period for all three (3) DISCHARGE AREA sites of each wetland and the two (2) REFERENCE AREA sites. Please note footnote P<sub>2</sub> for an exception to the monitoring period.

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P<sub>1</sub>- Sample preservation, handling, and analysis must meet the specifications of the Test Methods for Evaluating Solid Waste Physical/Chemical Methods, third edition (EPA Publication Number SW-846, 1986, or most recent revision) or an equivalent substitute as approved by the administrative authority.

P<sub>2</sub>- Sampling to be conducted in summer to reflect peak growth.

**Q: QUARTERLY.** Sampling (once sample collected per site) must be made every three months annually for all three (3) DISCHARGE AREA sites of each wetland and the two (2) REFERENCE AREA sites.

**If loading rates exceed 15 g/m<sup>2</sup>/yr total nitrogen or 4 g/m<sup>2</sup>/yr total phosphorus, then either the loading rates must be reduced or the assimilation area must be increased.**

Example Calculation for Determining the Nutrient Loading Rates for Wetland Assimilation:

4 g TP/m<sup>2</sup>/yr = 35.6 lbs. TP/acre/yr  
15 g TN/m<sup>2</sup>/yr = 133.8 lbs. TN/acre/yr

Loading Rate for Total Phosphorus:

Discharging to 1,450 acres, then the yearly loading rate is:  
(35.6 lbs. TP/acre/year) x 1,450 acres = 51,620 lbs. TP/year

The long term average daily loading rate is:  
(51,620 lbs. TP/year) / 365 days/year = 141 lbs. TP/day

The daily maximum discharge loading rate is:  
(141 lbs. TP/day) x 3.11 = 439 lbs. TP/day

The maximum 30-day discharge is:  
(141 lbs. TP/day) x 1.31 = 185 lbs. TP/day

Loading Rate for Total Nitrogen:

Discharging to 1,450 acres, then the yearly loading rate is:  
(133.8 lbs. TN/acre/year) x 1,450 acres = 194,010 lbs. TN/year

The long term average daily loading rate is:  
(194,010 lbs. TN/year) / 365 days/year = 532 lbs. TN/day

The daily maximum discharge loading rate is:  
(532 lbs. TN/day) x 3.11 = 1,655 lbs. TN/day

The maximum 30-day discharge is:  
(532 lbs. TN/day) x 1.31 = 697 lbs. TN/day

Suggestions for sampling during the wetland monitoring phase can be found in *The Use of Louisiana Swamp Forests for Application of Treated Municipal Wastewater: Standard Operating Procedures for Monitoring the Effects of Effluent Discharge*. John W. Day, Jr., Joel Lindsey, Jason N. Day, and Robert R. Lane, Comite Resources, Inc. Used with the permission of Dr. John W. Day, Jr., March 14, 2003.

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**X. PREVIOUS PERMITS:**

LPDES Permit No. LA0038288: Effective: January 1, 2004  
Expired: December 31, 2008

Outfall 001 – into Bayou Chinchuba, effective on January 1, 2004, and expired upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>	
	<u>Monthly Avg.</u>	<u>Weekly Avg.</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow	Report	Report	Continuous	Recorder
CBOD <sub>5</sub>	167 lb/day / 10 mg/l	15 mg/l	2/week	6 Hour Composite
TSS	250 lb/day / 15 mg/l	23 mg/l	2/week	6 Hour Composite
NH <sub>3</sub> -N	67 lb/day / 4 mg/l	8 mg/l	2/week	6 Hour Composite
Fecal Coliform				
Colonies/100 ml	200	400	2/week	Grab
pH	Range (6.0 su – 9.0 su)		2/week	Grab
Total Zinc	Report (lb/day)	Report (lb/day)	1/quarter	24 Hour Composite
Biomonitoring				
<i>Pimephales promelas</i>	Report	Report	1/quarter	24 Hr Comp
<i>Ceriodaphnia dubia</i>	Report	Report	1/quarter	24 Hr Comp

Outfalls 001 – 027 – into Chinchuba Swamp and the East Tchefuncte Marsh, effective upon completion of the construction of the outfalls into the Chinchuba Swamp and the East Tchefuncte Marsh and expired on December 31, 2008. (Please note that the City of Mandeville has not yet completed construction of the outfalls.)

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>	
	<u>Monthly Avg.</u>	<u>Weekly Avg.</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow	Report	Report	Continuous	Recorder
BOD <sub>5</sub>	1,001 lb/day/30 mg/l	45 mg/l	2/week	6 Hour Composite
TSS	3,002 lb/day/90 mg/l	135 mg/l	2/week	6 Hour Composite
Fecal Coliform				
Colonies/100 ml	1,000	2,000	2/week	Grab
pH	Range (6.0 su – 9.0 su)		2/week	Grab
Priority Pollutants	---	Report	1/year	24 Hour Composite
Total Zinc	0.54 lb/day	1.28 lb/day	1/quarter	24 Hour Composite

Wetland Monitoring was required in the previous permit.

**XI. ENFORCEMENT AND SURVEILLANCE ACTIONS:****A) Inspections**

A review of the files indicates the following most recent inspections performed for this facility.

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Date – October 30, 2007

Inspector – LDEQ

Findings and/or Violations –

- There was evidence that a manhole in front of the St. Timothy Church had overflowed. Suspect overflow occurred due to recent heavy rainfall.
- The manhole was vacuumed and a neutralizer was applied to the affected area.
- Mr. David Wittner stated this manhole is periodically pumped out due to negative flow.
- Mr. Wittner stated that a new lift station is planned to be put in place to help with flow and possible expansion of the church.
- Mr. Connor, with the church, was present and stated that the City of Mandeville periodically comes out to pump out the manhole.
- Solids were noted on the lawn of the church and was cleaned.

Date – December 11, 2007

Inspector – LDEQ

Findings and/or Violations –

- I & I problems reported in the collection system. Permittee reported three (3) incidents since the last inspection.
- The facility is a Rock Reed Filter Plant with three aeration lagoons.
- At the time of the inspection, only one outfall 001 was discharging and the effluent was clear.
- Records were available on-site and reviewed.
- The flow meter was last calibrated on 12/27/06 and is scheduled for recalibration on 12/18/07.

**B) Compliance and/or Administrative Orders**

A review of the files indicates that no recent enforcement action has been administered against this facility.

**C) DMR Review**

A review of the discharge monitoring reports for the period beginning September 2006 through August 2008 has revealed the following violations:

Parameter	Outfall	Period of Excursion	Permit Limit	Reported Quantity
CBOD <sub>5</sub> , Monthly Avg.	001	January 2008	167 lbs/day	207 lbs/day
CBOD <sub>5</sub> , Monthly Avg.	001	January 2008	10 mg/l	11 mg/l
NH <sub>3</sub> -H, Monthly Avg.	001	April 2008	67 lbs/day	162 lbs/day
NH <sub>3</sub> -N, Monthly Avg.	001	April 2008	4 mg/l	10.7 mg/l
NH <sub>3</sub> -N, Weekly Avg.	001	April 2008	8 mg/l	13.5 mg/l
Total Zinc, Monthly Avg.	001	Oct. – Dec., 2006	0.54 lb/day	DID NOT REPORT
Total Zinc, Daily Max.	001	Oct. – Dec., 2006	0.54 lb/day	DID NOT REPORT

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**XII. ADDITIONAL INFORMATION:**

**Reopener Clause**

The Louisiana Department of Environmental Quality (LDEQ) reserves the right to impose more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional water quality studies and/or TMDLs. The LDEQ also reserves the right to modify or revoke and reissue this permit based upon any changes to established TMDLs for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as necessary to achieve compliance with water quality standards. Therefore, prior to upgrading or expanding this facility, the permittee should contact the Department to determine the status of the work being done to establish future effluent limitations and additional permit conditions.

In accordance with LAC 33:IX.2903., this permit may be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitations issued or approved under sections 301(b)(2)(c) and (D); 304(b)(2); and 307(a)(2) of the Clean Water Act, if the effluent standard or limitations so issued or approved:

- a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
- b) Controls any pollutant not limited in the permit; or
- c) Requires reassessment due to change in 303(d) status of waterbody; or
- d) Incorporates the results of any total maximum daily load allocation, which may be approved for the receiving water body.

**Mass Loadings Calculations**

Final effluent loadings (i.e. lbs/day) have been established based upon the permit limit concentrations and the design capacity of 4 MGD (30% into Chinchuba Swamp and 70% into the East Tchefuncte Marsh).

Effluent loadings are calculated using the following example:

$$\text{BOD}_5: 8.34 \text{ gal/lb} \times 1.2 \text{ MGD} \times 30 \text{ mg/l} = 300 \text{ lbs/day}$$

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**Monitoring Requirements**

For the current discharge path (Outfall 001) into Bayou Chinchuba, the Monitoring Requirements, Sample Types, and Frequency of Sampling as shown in the permit are standard for facilities of flows between 1 MGD and 5 MGD.

Effluent CharacteristicsMonitoring Requirements

<u>Measurement Frequency</u>	<u>Sample Type</u>
------------------------------	--------------------

Conventional Pollutants

Flow	Continuous	Recorder
CBOD <sub>5</sub>	2/week	6 Hr. Composite
Total Suspended Solids	2/week	6 Hr. Composite
Ammonia-Nitrogen	2/week	6 Hr. Composite
Fecal Coliform Bacteria	2/week	Grab
pH	2/week	Grab

Priority Pollutants

Total Phenols	1/quarter	24 Hr. Composite
Total Lead	1/quarter	24 Hr. Composite
Total Zinc	1/quarter	24 Hr. Composite

Biomonitoring

<u>Ceriodaphnia dubia</u>	1/quarter	24 Hr. Composite
<u>Pimephales promelas</u>	1/quarter	24 Hr. Composite

For the future wetland discharge (Outfalls 002 & 003), the Monitoring Requirements, Sample Types, and Frequency of Sampling as shown in the permit are standard for facilities of flows between 1 MGD and 5 MGD.

Effluent CharacteristicsMonitoring Requirements

<u>Measurement Frequency</u>	<u>Sample Type</u>
------------------------------	--------------------

Outfalls 002 & 003Conventional Pollutants

Flow	Continuous	Recorder
BOD <sub>5</sub>	2/week	6 Hr. Composite
Total Suspended Solids	2/week	6 Hr. Composite
Fecal Coliform Bacteria	2/week	Grab
pH	2/week	Grab

Priority Pollutants

Total Phenols	1/quarter	24 Hr. Composite
Total Lead	1/quarter	24 Hr. Composite
Total Zinc	1/quarter	24 Hr. Composite

Wetland Assimilation Parameters

Total Magnesium	1/6 months	24 Hr. Composite
Total Lead	1/6 months	24 Hr. Composite
Total Cadmium	1/6 months	24 Hr. Composite
Total Chromium	1/6 months	24 Hr. Composite



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Total Copper	1/6 months	24 Hr. Composite
Total Zinc	1/6 months	24 Hr. Composite
Total Iron	1/6 months	24 Hr. Composite
Total Nickel	1/6 months	24 Hr. Composite
Total Silver	1/6 months	24 Hr. Composite
Total Selenium	1/6 months	24 Hr. Composite
Total Nitrogen	1/quarter	24 Hr. Composite
Total Phosphorus	1/quarter	24 Hr. Composite

Biomonitoring (Combined Outfall 002 & 003)

<u>Daphnia pulex</u>	1/year	24 Hr. Composite
<u>Pimephales promelas</u>	1/year	24 Hr. Composite

Wetland Monitoring

see Wetland System Monitoring

**Construction Schedule**

The permittee shall efficiently operate and maintain the existing treatment facility so as to discharge effluent which does not exceed the INTERIM EFFLUENT LIMITATIONS and MONITORING REQUIREMENTS.

The permittee shall achieve compliance with the FINAL EFFLUENT LIMITATIONS and MONITORING REQUIREMENTS specified in accordance with the following schedule:

ACTIVITY	DATE
Achieve Interim Effluent Limitations and Monitoring Requirements for Outfall 001	Effective Date of the Permit
Achieve Interim Effluent Limitations and Monitoring Requirements for Outfalls 002 and 003	Upon completion of the construction of the outfalls into the Chinchuba Swamp and East Tchefuncte Marsh, but no later than two (2) years from the effective date of the permit
Achieve Final Effluent Limitations and Monitoring Requirements for Outfalls 002 and 003	Three years from the effective date of the permit.

The above listed activities must be achieved on or before the deadline set in the table above. Additionally, the Permittee shall submit a progress report outlining the status of all related projects on a yearly basis (from the effective date of the permit) until compliance is achieved.

Within 14 days of completion of the construction of the distribution system, the Permittee shall notify the Department of Environmental Quality – Office of Environmental Compliance, in writing, that construction has been completed. In addition, enforcement authority has been retained by EPA. Therefore, EPA must also be notified at the following address:

U.S. Environmental Protection Agency, Region 6  
Water Enforcement Branch, 6 EN-WC  
1445 Ross Ave.  
Dallas, Texas 75202

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The Permittee shall achieve sustained compliance with Final Effluent Limitations.

Where the percent project completion reported is less than would be required to assure completion of construction by the required date, the report of progress shall also include an explanation for this delay and proposed remedial actions.

No later than 14 days following a date for a specific action (as opposed to a report of progress), the permittee shall submit a written notice of compliance or noncompliance.

During the Draft Permit comment period, the permittee may conduct and submit the results of three (3) or more additional effluent analyses to either refute or substantiate the presence of the toxic pollutant(s) limited in the Draft Permit. The additional analyses will be evaluated by this Office to determine if the pollutant(s) is/are potentially in the effluent and if it/they potentially exceed the State's water quality standards.

#### Pretreatment Requirements

Based upon consultation with LDEQ pretreatment personnel, general pretreatment language will be used due to the lack of either an approved or required pretreatment program.

#### Pollution Prevention Requirements

The permittee shall institute or continue programs directed towards pollution prevention. The permittee shall institute or continue programs to improve the operating efficiency and extend the useful life of the facility. The permittee will complete an annual Environmental Audit Report each year for the life of this permit according to the schedule below. The permittee will accomplish this requirement by completing an Environmental Audit Form which has been attached to the permit. All other requirements of the Municipal Wastewater Pollution Prevention Program are contained in Part II of the permit.

The audit evaluation period is as follows:

Audit Period Begins	Audit Period Ends	Audit Report Completion Date
Effective Date of Permit	12 Months from Audit Period Beginning Date	3 Months from Audit Period Ending Date

#### Stormwater Discharges

Because the design flow of the treatment facility is equal to or greater than 1.0 MGD and in accordance with LAC 33:IX.2511.B.14.i, the facility may contain storm water discharges associated with industrial activity. Therefore, in accordance with LAC 33:IX.2511.A.1.b, specific requirements addressing stormwater discharges will be included in the discharge permit.

### XIII

#### TENTATIVE DETERMINATION:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in this Statement of Basis.

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#### REFERENCES:

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 8, "Wasteload Allocations / Total Maximum Daily Loads and Effluent Limitations Policy," Louisiana Department of Environmental Quality, 2007.

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 5, "Water Quality Inventory Section 305(b) Report," Louisiana Department of Environmental Quality, 2006.

Louisiana Water Quality Management Plan / Continuous Planning Process, Vol. 3, "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards," Louisiana Department of Environmental Quality, 2008.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 11 - "Louisiana Surface Water Quality Standards," Louisiana Department of Environmental Quality, 2008.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Subpart 2 - "The LPDES Program," Louisiana Department of Environmental Quality, 2008.

Low-Flow on Streams in Louisiana, Louisiana Department of Environmental Quality, March 2000.

Index to Surface Water Data in Louisiana, Water Resources Basic Records Report No. 17, United States Department of the Interior, Geological Survey, 1989.

LPDES Permit Application to Discharge Wastewater, City of Mandeville, Chinchuba Swamp and East Tchefuncte Marsh Wetland Assimilation Project, October 10, 2008.